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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/712,704	11/13/2003	Kai Su	60049.0006USU1	9246

7590 10/22/2004

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EXAMINER

PADGETT, MARIANNE L

ART UNIT	PAPER NUMBER
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1762

DATE MAILED: 10/22/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

10/712,704

Applicant(s)

SU ET AL.

Examiner

Marianne L. Padgett

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 20 September 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-34 is/are pending in the application.
- 4a) Of the above claim(s) 7-10, 13, 14, 16-20 and 24-34 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-6, 11, 12, 15, 21-23 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

## Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

## Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_

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1. Applicant's election of Group I, method claims, species (i) polymeric or plastic substrates in the reply filed on 9/20/04 is acknowledged. Because applicant did not distinctly and specifically point out the supposed errors in the restriction requirement, the election has been treated as an election without traverse (MPEP § 818.03(a)).

The elected claims for group I and species (i) are therefore 1-6, 11-12, 15 and 21-23, with 1-4 and 21-23 thereof generic.

2. Claims 1-6, 11-12, 15 and 21-24 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Use of relative terms that lack clear metes and bounds in the claims, or in a definitive definition in the specification or in cited relevant prior art, is vague and indefinite. In claim 1, see the use of "protective". In what way, against what environment or chemical or condition or use or what, is the coating protective? Note that any coating that exists might be construed to be protective against something somewhere; it's all relative to the conditions. In claims 21-22, see "volatile". Depending on the conditions, virtually any material can be made volatile, and no conditions have been specified.

3. Copending case 10/075,637 to overlapping inventors is noted to be of interest as directed to analogous subject matter, however at present while having considerable overlap in substrate (optical), curing (UV or IR), coating use (protective verses scratch resistant), the claims appear differentiated by differing emphasis, as the instant case broadly uses "pad printing", but 10/075,637 appear to be giving extensive details of what that might mean, but claims no specific composition, while the present claims emphasis composition.

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

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(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

5. Claims 1-3, 5 and 11-12 are rejected under 35 U.S.C. 102(a) as being clearly anticipated by Perrine et al (2003/0194550 A1).

Perrine et al teach deposition of abrasion resistant coatings (i.e. protective) on substrates may be glass or flexible plastic like vinyl or rigid, like polycarbonate or polyester, exemplified by flooring, desks and table tops, where improved wear clarity is desired. The coating composition includes a binder and a mixture of modified alumina and possible modified silica, where silane is used for the modification in order provide functional groups that will react with the binder, hence it is an adhesion promoter.

Exemplary groups on the silane include meth(acryloxy) with silanes including vinyltriethoxysilane, etc. Other additive may include benzotriazoles, photosensitizers, organic solvents such as dipropylene glycol monoethylether acetate, etc. An exemplary base composition (i.e. binder) in which the silane modified particles are dispersed, includes tripropylene glycol diacrylate (TRPGDA), aliphatic urethane acrylate

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oligomer, and photoinitiator (Example; table 1). Other coatings on the substrate, such as primers, are contemplated as needed. The abrasion resistant coating may be applied by any conventional means inclusive of "padding, roll coating", etc., and can be cured by using UV radiation. Padding is considered to read on "pad printing". See the abstract; [0003], [0011], [0015-22], [0026-29] and [0034-35].

6. Claims 4, 6 and 21-22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Perrine et al.

Perrine et al not discuss cleaning their substrate as claimed before coating, however such cleaning options, like the washing conditions, in the broad or highly alternatively claims, are inclusive of common, conventional, and common sense, cleaning techniques as one of ordinary skill in the art would have expected to have been carried out as a matter of course before coating substrates as taught in Perrine et al, since in any coating operation, the presence of dirt or other contaminants on the substrate surface will impair coating adhesion and visual quality, etc., all factors important to wear of a wear resistant coating, especially with wear clarity, stayed as a desired quality. Note washing with soap as claimed, then rinsing and drying are standard and conventional, with the specific use of deionized water a common means of not reintroducing contaminants with the rinse.

Perrine et al do not have any teaching on the percentages or limits to the volatile material in the protective coating, however one of ordinary skill in the art would review taught compositions of Perrine et al to determine desirable proportion of various components. From table 1, one notes that all dilutants are reactive dilutants, hence are not intended to be volatilized, but to be polymerized. However, as noted above, "volatile" as a relative term, and its scope is unclear with respect to the claims, but if one considered that the Perrine et al composition appears to required no evaporation after coating, one of ordinary skill in the art would have found it obvious to employ no volatile material, in the sense of solvents to be evaporated.

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Perrine et al do not list any of the specific objects as substrates as applicants' claim 23, however the option of "part having an optically clear component", is consistent with various substrate material of Perrine et al such glass and polycarbonate. Notice is taken that suggested desks or table tops of Perrine et al, when considered with the taught substrate materials, is suggestive of protective coating on plastic and glass top tables and desks, hence would have been obvious substrates to coat as taught, since they would also have been in need of taught wear protection.

7. Other art of interest includes Lin et al (6,420,451 B1) and Fries et al (6,639,039 B1), who teach UV curable composition for glass, plastic, etc., substrates to impart scratch or impact resistance, that may include various components as claimed, and teach substrates such as claimed optical one. This reference differ by teaching application methods, such as dip, roll coat, spin, spray, but not pad printing. Lin et al and Fries et al are considered cumulative to Perrine et al for other substrates that are desirable to analogous by protectively coat, and with the exception of coating application technique, equivalently applicable to claims 1-6, 11-12 and 21-23. Nakamura et al (6,211,260 B1), Shimade et al (6,485,838 B1), Wright (5,374,483) and Lucey (5,306,739) are further of interest for liquid compositional components in coatings that might be considered protective.

8. Claim 15 would be allowable if rewritten to overcome the rejection(s) under 35 U.S.C. 112, 2nd paragraph, set forth in this Office action and to include all of the limitations of the base claim and any intervening claims.

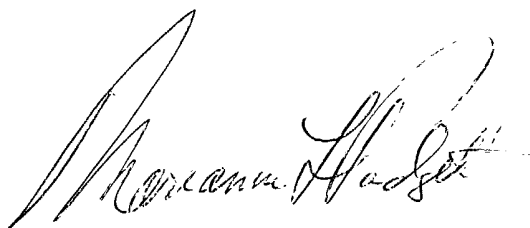
9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to M L. Padgett whose telephone number is (571) 272-1425. The examiner can normally be reached on Monday-Friday from about 8:30 am to 4:30 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Shrive Beck can be reached on (571) 272-1415. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

M. L. Padgett/af  
October 12, 2004  
October 21, 2004

A handwritten signature in black ink, appearing to read "Marianne Padgett", with a long horizontal flourish extending to the right.

**MARIANNE PADGETT**  
**PRIMARY EXAMINER**